



PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

IN THE PATENT APPLICATION OF:

GORDON JEFFREY HUGHGINS AND
LEONARD W. HOLMES

U.S. SERIAL NO: UNKNOWN 10 / 700, 282 GROUP: UNKNOWN

FILED: NOVEMBER 3, 2003

EXAMINER: UNKNOWN

FOR: MULTISTAGE WARM AIR FURNACE
WITH SINGLE STAGE THERMOSTAT
AND RETURN AIR SENSOR AND
METHOD OF OPERATING SAME

La Crosse, Wisconsin
January 30, 2004

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Date William O'Driscoll

INFORMATION DISCLOSURE STATEMENT A

Mail Stop DD
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450
Dear Sir:

The following documents are submitted to fully comply with
applicant's duty of disclosure.

U.S. Patent 4,467,616 to Kitauchi includes a control unit
which responds to both the temperature difference and the rate of change
in temperature per unit time to increase or decrease the number of
compressors put into operation with respect to the number of compressors

operated at the just proceeding interval of time. A single heat sensitive element 30 is used to calculate the difference ΔT_1 between the actual temperature T_{a1} and the set temperature T_s and a rate of change T_2 of the element.

U.S. Patent 4,408,278 to Saito et al. produces a difference between an actual in car temperature and a desired value when the rate of change of the actual in car temperature is below a predetermined value.

U.S. Patent 4,337,893 to Flanders et al. includes a plurality of burner assemblies which are energized dependent upon the magnitude of difference between space temperature and a reference temperature.

U.S. Patent 4,417,688 to Schnaibel et al. compares a temperature command signal in a feedback signal and produces an error signal to operate an actuator which in turn actuates an adjuster for fluid flow through a heat exchanger. The command signal is adjustable by a passenger while the feedback signal is derived from a passenger compartment temperature sensor and from a heat exchanger temperature sensor.

U.S. Patent 4,172,555 to Levine determines the optimum time to switch a furnace system "on" to meet the next program increase temperature by switching the furnace "on" then "off" a short time later and measuring the temperature change resulting in the building as a result of that transient operation. The time at which the furnace must be switched "on" to attain the next program temperature is determined as a function of the rate of temperature change as determined by the transient switching and a difference between the instantaneous and future program temperature.

U.S. Patent 4,442,972 to Sahay et al. controls the main and auxiliary temperature conditioning stages of a system 12. A thermostat continuously senses actual zone temperature while the main temperature conditioning means of the system is operating, periodically determines the rate of change of the zone temperature actually being affected in the zone 14 with such operation of the system 12, and actuates the

auxiliary temperature conditioning means of the system to add to the main temperature conditioning means only when the rate of change of temperature actually being affected in the zone is below a selected or desired optimum rate of temperature change.

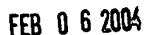
As noted, the foregoing are submitted to fully comply with applicant's duty of disclosure and are not considered to be particularly relevant to the claimed invention.

Respectfully Submitted,

A handwritten signature in cursive script, reading "William O'Driscoll". The signature is written in dark ink and is positioned above the printed name and registration number.

William O'Driscoll
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Approved for use through 07/31/2006. OMB 0651-0031

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Complete if Known

Application Number

Filing Date

11/03/2004

First Named Inventor

Huggins, G. J.	
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Art Unit

Examiner Name

Attorney Docket Number

D-2747/WOD

U. S. PATENT DOCUMENTS

[illegible]

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